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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,777	07/13/2001	Thomas Schaefer	205328US0	1474

22850 7590 09/16/2003

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

MEDINA SANABRIA, MARIBEL

ART UNIT PAPER NUMBER

1754

DATE MAILED: 09/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/903,777	Applicant(s) SCHAEFER ET AL.	
	Examiner Maribel Medina	Art Unit 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6, 8 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-6, 8 and 15 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |                                                                                              |                                                                             |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

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### DETAILED ACTION

#### Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 3,379,500 (Albanese et al).

Albanese et al discloses a process for the synthesis of hydrogen cyanide comprising reacting ammonia, methane, nitrogen and oxygen in the presence of nets of catalysts selected from the group consisting of metals of the platinum group and alloys thereof (See col. 1, lines 14-21). The oxygen and nitrogen are present in molar ratio which satisfies the relationship  $[O_2]/[N_2+O_2] > 0.21$  up to 0.40 (See col. 2, lines 40-45). Methane and ammonia are present in a molar ration of  $[CH_4]/[NH_3]$  from 1.4 to 1.05 (See col. 2, lines 50-55).

The only difference between the instantly claimed invention and Albanese et al is that Albanese et al fail to disclose that a "molar ratio of ammonia to the sum of oxygen and nitrogen obeys the following relationship:  $Y = m \cdot X - a$  wherein:  $Y = [NH_3]/[N_2+O_2]$ ;  $X = [O_2]/[N_2+O_2]$ ;  $m = 1.25$  to  $1.40$ ; and  $a = 0.05$  to  $0.14$ ."

Albanese discloses in cols. 3 and 4 in the table various points which fall in the instantly claimed range, therefore if one of ordinary skill in the art sets substitutes the various points set in the examples of Albanese et al in the claimed relationship, the values of  $m$  and  $a$  will inherently

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be within the instantly claimed range. For example for Albanese et al example point 4, wherein  $X=[O_2]/[N_2+O_2] = 0.30$  and  $Y=[NH_3]/[N_2+O_2] = 0.25$  and setting the  $m$  value to 1.25, the  $a$  will be 0.133 which falls in the instantly claimed range, the same can be applied for the range of instant claim 4, by selecting the point  $X=[O_2]/[N_2+O_2] = 0.40$  and  $Y=[NH_3]/[N_2+O_2] = 0.44$  and setting the  $m$  value to 1.33 then  $a$  will be 0.08.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined by experimentation and mathematical methods the relationship between the concentrations of ammonia and oxygen as instantly claimed since this a very common and known method of comparison used widely in the art.

In regards to claim 5, Albanese et al disclose in col. 4, lines 40-44, that the feeding gas is preheated to 110°C. In regards to claim 6, Albanese disclose that ammonia and methane are controlled as a function of  $[O_2]/[N_2+O_2]$  (See col. 3, lines 35-40).

In regards to claim 8 Albanese fail to disclose the use of an Andrussov reactor, However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used an Andrussov reactor since this a well known type of reactor used in the production of hydrogen cyanide from, methane, ammonia and oxygen-containing gaseous streams.

In regards to the limitation of claim 15 that reads "wherein said methane-containing natural gas contains at least 88 vol.% of methane" Albanese et al clearly discloses in col. 5, lines 1-3, that "gaseous mixtures containing at least 90% of  $CH_4$ , in particular natural gas" can be used.

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**Response to Arguments**

3. Applicant's arguments filed on 7/14/03 have been fully considered but they are not persuasive.

Applicants' argue "Albanese et al provide no teaching or suggestion to set up the equation of present Claim 1 to arrive at the narrow range of starting gas compositions encompassed in the figure of the present invention and specifically set forth as a limitation in present Claim 1." This argument is not persuasive, since although Albanese et al do not disclose the instantly claimed equation, the value desired to be calculated by the equation ,  $Y=[NH_3]/[N_2+O_2]$  is clearly disclosed by Albanese et al, furthermore the narrow range of starting gas compositions is also disclosed by Albanese et al. The determination of the instantly claimed equation does not differentiate the instantly claimed method and feeding composition ranges from the method and feeding compositions of Albanese et al.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

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**Allowable Subject Matter**

4. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: Claim 3 disclose allowable subject matter. The prior art fail to disclose or suggest that molar ratio of methane to ammonia = 0.98 to 1.02.

**Conclusion**

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner Maribel Medina. The examiner can normally be reached on Monday through Friday from 7:30AM to 4:00 PM. Any inquiry of a general nature

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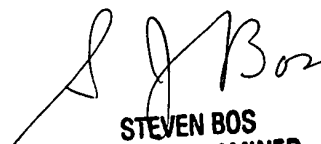
or relating to the status of this application or proceeding should be directed to the receptionist  
whose telephone number is 703-308-0661.

Examiner: Maribel Medina 

Tel: 703-305-1928

Fax: 703-872-9310

September 11, 2003

  
STEVEN BOS  
PRIMARY EXAMINER  
GROUP 1100